

REMARKS

Reconsideration of the application is requested.

Applicants appreciatively acknowledge the Examiner's confirmation of receipt of applicant's certified copy of the priority document for the German Patent Application 199 13 959.8, filed March 26, 1999 supporting the claim for priority under 35 U.S.C. § 119(a) - (d) .

Claims 1-6 remain in the application. Claims 1 and 6 have been amended. A marked-up version of the claims is attached hereto on separate pages.

In the second paragraph on page 2 of the above-identified Office Action, claim 6 has been rejected as being indefinite under 35 U.S.C. § 112, second paragraph.

More specifically, the Examiner states that "[t]he term 'CrFe5Y<sub>2</sub>O<sub>3</sub>1' is an improper chemical formula."

The chemical formula "CrFe5Y<sub>2</sub>O<sub>3</sub>1", appearing in the specification and in claim 6 has been corrected to now read "Cr<sub>5</sub>Fe<sub>1</sub>Y<sub>2</sub>O<sub>3</sub>".

Support for these changes may be found on page 5, lines 5 - 7 of the specification of the instant application.

It is accordingly believed that the specification and the claims meet the requirements of 35 U.S.C. § 112, second paragraph. The above-noted changes to the claims are provided solely for cosmetic and clarification purposes. The changes are neither provided for overcoming the prior art nor do they narrow the scope of the claim for any reason related to the statutory requirements for a patent.

In the second paragraph on page 3 of the above-identified Office Action, claims 1 and 4 have been rejected as being fully anticipated by Quadakkers (Pub. No. WO/009723006) under 35 U.S.C. § 102.

The rejection has been noted and the claims have been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found on page 6, line 11, through page 7, line 11 of the specification of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Amended claim 1 calls for, *inter alia*:

A high-temperature fuel cell, comprising:

...

a fuel-gas chamber formed between said bipolar plate and said anode; and

an oxidation buffer containing iron and being disposed in said fuel-gas chamber permitting fuel-gas to pass between said oxidation buffer and said bipolar plate, and between said oxidation buffer and said electrolyte/electrode unit. (Emphasis added)

Claim 1 recites the presence of an oxidation buffer situated between the electrolyte/electrode unit and the bipolar plate. The buffer removes and stores oxygen that is situated in the fuel-gas chamber of the high-temperature fuel cell while the latter is in an operating mode. Consequently, oxygen is withdrawn from the entire fuel-gas environment and is then no longer available for oxidation of the bipolar plate.

The Quadakkers reference discloses a metallic bipolar plate 1 for a high-temperature fuel cell. The plate 1 is electrically connected at one side to an anode and at the other to a cathode. The plate 1 is provided with gas channels 4 at one of its edges. (see abstract and accompanying picture).

In contrast to the present invention, the Quadakkers reference does not show an oxygen buffer, being disposed

between the bipolar plate and an electrolyte/electrode unit,  
allowing fuel-gas to flow between the plate and unit, and  
being capable of removing oxygen from the chamber  
environment, as recited in claim 1 of the instant  
application.

It is accordingly believed to be clear that the Quadakkers  
reference does not show or suggest the features of claim 1.  
Claim 1 is, therefore, believed to be patentable over the  
art. The dependent claims are believed to be patentable as  
well because they all are ultimately dependent on claim 1.

In the second paragraph on page 4 of the above-identified  
Office Action, claims 1 and 4 have been rejected as being  
fully anticipated by May et al. (U.S. Pub. 2001/0021470)  
under 35 U.S.C. § 102.

Initially, it is noted that May et al. has a U.S. filing date  
of March 14, 2001 and is based on a PCT application filed on  
September 27, 1999, both of which are subsequent to the  
German priority date of March 20, 1999, to which the instant  
application is entitled. The reference is therefore not  
available to be cited against the instant application.

The present invention as claimed is discussed in the preceding paragraphs. The May et al. reference discloses a bipolar separator plate 5 disposed between two membrane plates 1 and 2. Plate 5 and plates 1 and 2 are then further sandwiched between two outer terminal plates 7 and 8. This arrangement in May et al. defines a fuel gas chamber 12 between membrane plate 1 and terminal plate 7 and a second fuel gas chamber 13 between membrane plate 2 and terminal plate 8 (Para. 0074). The May et al. reference does not disclose any other elements in the fuel gas chamber.

Clearly, May et al. do not show an oxidation buffer disposed in the fuel-gas chamber as recited in claim 1 of the instant application.

In the first paragraph on page 5 of the above-identified Office Action, claims 1-5 have been rejected as being fully anticipated by Molter (U.S. Pub. No. 2001/0049044) under 35 U.S.C. § 102.

Initially, it is noted that the Molter reference has a U.S. filing date of December 22, 2000, and is based on a provisional application filed on December 22, 1999, both of which are subsequent to the German priority date of March 20, 1999, to which the instant application is entitled. The

reference is therefore not available to be cited against the instant application.

The present invention as claimed is discussed in the preceding paragraphs. Molter discloses an electrochemical cell arrangement using a bipolar plate 31, 33 adjacent an electrode support 32, which is adjacent an electrode assembly 7/8/3. The bipolar plate 31, 33 has channels 43 and 45 for coolant and hydrogen gas flow, respectively.

Molter does not, however, disclose an oxidation buffer containing iron being disposed in a fuel-gas chamber, as does claim 1 of the instant application. The only element Molter discloses being disposed between the bipolar plate and the electrode is an electrode support, which is constructed of carbon paper (Para. 0030). Additionally, Molter teaches away from the presence of an iron oxygen buffer located between an electrode and a bipolar plate. In paragraph 0034, Molter states that "the use of metallic, particularly titanium, foil sheets produces a bipolar plate which: (1) has better thermal conductivity than graphite and therefore better heat rejection or cooling of the cell; (2) is less porous than graphite and therefore reduced losses due to diffusion; (3) better electrical conductivity than graphite; (4) improved structural integrity thereby enabling the use of thinner

plates having better electrical and heat conductivity and fewer losses."

Clearly, Molter does not show an oxidation buffer containing iron disposed **in** the fuel-gas chamber as recited in claim 1 of the instant application.

In the fourth paragraph on page 5 of the above-identified Office Action, claim 6 has been rejected as being obvious over Quadakkers (U.S. Patent No. 5,733,682) in view of Quadakkers (WO/9723006) under 35 U.S.C. § 103.

Both Quadakkers references disclose a metallic bipolar plate 1 for a high-temperature fuel cell. The plate 1 is electrically connected at one side to an anode and at the other to a cathode. The plate 1 is provided with gas channels 4 at one of its edges. (see abstract and accompanying picture).

In contrast to the present invention, neither Quadakkers reference shows or suggests the presence of an oxygen buffer that is disposed **between** the bipolar plate and an electrolyte/electrode unit, allowing fuel-gas to flow **between** **the plate and unit**, as recited in claim 1 of the instant application.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claim 1. Claim 1 is, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claim 1.

In view of the foregoing, reconsideration and allowance of claims 1-6 is solicited.

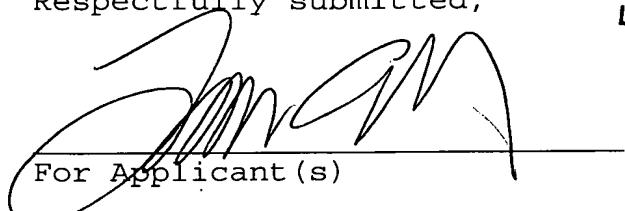
In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

If an extension of time is required for this paper, Petition is herewith made.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Appl. No. 09/963,977  
Amdt. Dated January 7, 2004  
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Respectfully submitted,



For Applicant(s)  
SDS

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